**ESS Topic 1: Systems**

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| **Learning Outcomes** | **Main Ideas** | **Specific content that you would use to answer this question** | **Relevant Case Studies & Description** |
| Outline the concept and characteristics of systems |  |  |  |
| Apply the systems concept on a range of scales |  |  |  |
| Define the terms: open system, closed system, isolated system |  |  |  |
| Describe how the first and second laws of thermodynamics are relevant to environmental systems |  |  |  |
| Explain the nature of equilibria |  |  |  |
| Define and explain the principles of positive feedback and negative feedback |  |  |  |
| Describe transfer and transformation processes |  |  |  |
| Distinguish between flows (inputs and outputs) and storages (stock) in relation to systems |  |  |  |
| Construct and analyze quantitative models involving flows and storages in a system |  |  |  |
| Evaluate the strengths and limitations of models |  |  |  |